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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,753	02/17/2004	Thomas G. Krajewski	D-2778Div2/WOD	9780
7590	04/14/2005		EXAMINER	
William O'Driscoll - 12-1			KOVALICK, VINCENT E	
Trane 3600 Pammel Creek Road La Crosse, WI 54601			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/779,753	KRAJEWSKI ET AL.
	Examiner	Art Unit
	Vincent E Kovalick	2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 February 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 40-54,91-101,113-116,122,125 and 132-137 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 40-54,91-101,132 and 133 is/are allowed.
 6) Claim(s) 113-116,122,125 and 134-137 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 17 February 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/25/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. This Office Action is in response to Applicant's Divisional Patent Application, Serial No. 10/779,753, with a File Date of February 17, 2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 113, 115, 134 and 136 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger et al. (USP 4,145,748).

Relative to claims 113, 115, 134 and 136, Eichelberger **teaches** a self-optimizing touch pad sensor circuit (col. 2, lines 25-68 and col. 3, lines 1-31); Eichelberger further **teaches** an apparatus determining whether or not a touch screen has been touched comprising: means of providing an analog to digital reading from an analog to digital converter; means for reading a minimum or maximum bit level; means for determining whether the reading is smaller than the minimum or maximum bit level; and means for determining the absence of a user touch if the reading is less than a minimum or maximum bit level (col. 2, lines 39-61).

The difference between the teachings of Eichelberger and that of the instant invention and that

Eichelberger teaches the digital value (bit level) corresponding to a ‘no touch’ condition being stored in memory facilitating a direct comparison of any digital reading to the ‘no touch’ reading and thus determining whether or not a touch screen has been touched.

It would have been obvious to a person of ordinary skill in the art at the time of the invention that the teachings of Eichelberger satisfy the limitations as taught in claims 113, 115, 134 and 136 of the instant invention.

4. Claims 114 and 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger et al. as applied to claims 113 and 115 respectively and further in view of Crawford et al. (USP 5,994,844)

Relative to claims 114 and 116, Eichelberger et al. **does not teach** the apparatus wherein the providing means includes a pull down resistor.

Eichelberger et al. teaches a self-optimizing touch pad sensor circuit.

Crawford et al. **teaches** a photo-sensor comprising an analog to digital converter coupled with a pull down resistor (col. 4, lines 21-39); Crawford et al. further **teaches** an apparatus wherein the providing means includes a pull down resistor (col. 4, line 21-29).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Eichelberger et al. the feature as taught by Crawford et al. in order to put in place the means to generate a digital value representative of touched coordinates of the touch screen.

5. Claims 122 and 125 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gungl et al. (USP 5,241,139) taken with Ozaki et al. (USP 6,342,915) in view of Ishii (USP 5,949,012).

Regarding claims 122 and 125, Gungl et al. (col. 2, lines 46-68 and col. 3, lines 1-55); Gungl et al. further **teaches** an apparatus determining whether a touch screen has been touched comprising: means for reading a first coordinate of a coordinate pair at a first time; and means for consecutively reading the same coordinate at a second time; (col. 2, lines 51-55).

Gungl et al. **does not teach** means for determining if the absolute value of the difference between the first coordinate and the consecutive coordinate is less than a predetermined value; and means, response to the determining means, for quantifying the coordinate position as a function of the first or the consecutive coordinate.

Gungl et al. teaches a method and apparatus for determining the position of a member contacting a touch screen.

Ozaki et al. **teaches** a device constituted by a computer includes a display device, and a touch panel attached to the front surface of a display screen (col. 5, lines 1-16); Ozaki et al. further **teaches** means for determining if the absolute value of the difference between the first coordinate and the consecutive coordinate is less than a predetermined value (col. 5, lines 56-62).

It would have been obvious to a person of ordinary skill in the art the time of the invention to provide to the device as taught by Gungl et al. the feature as taught by Ozaki et al. in order to put in place the means to determine if there is a difference between the first and second reading and if so the is the value less than a predetermined value.

Gungl et al. taken with Ozaki et al. **does not teach** means response to the determining means , for quantifying the coordinate position as a function of the first or the consecutive coordinate.

Gungl e al. taken with Ozaki et al teaches a method and apparatus for determining the position of a member contacting a touch screen.

Ishii **teaches** a touch panel that detects a position where an operator touches his finger and then outputs a detection result as a coordinate value (col. 9, lines 52-65); Ishii further **teaches** means response to the determining means , for quantifying the coordinate position as a function of the first or the consecutive coordinate (col. 11, lines 13-19).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Gunzl et al. taken with Ozaki et al. the feature as taught by Ishii in order to establish the coordinate position of the touch position on the touch screen.

6. Claims 135 and 137 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger et al. as applied to claims 134 and 136 respectively and further in view of Morris (USP 6,259,282).

Relative to claims 135 and 137, Eichelberger et al. **does not teach** an apparatus wherein the providing means includes a pull up resistor.

Eichelberger et al. teaches a self-optimizing touch pad sensor circuit.

Morris **teaches** an external pull-up resistor detection and compensation of an output buffer (col. 1, lines 34-54); Morris further **teaches** an apparatus wherein the providing means includes a pull up resistor (col. 3, lines 55-67).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Eichelberger et al. the feature as taught by Morris in order to provide the means to increase the number of bits reflecting the digital signal.

Allowable Subject Matter

7. Claims 40-54, 91-101 and 132-133 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Relative to claim 40, the major difference between the teachings of the prior art of record (USP 4,145,748, Eichelberger et al. ; USP 4,853,498, Meadows et al. and USP 5,977,955, Jaeger) and that of the instant invention is that said prior art of record **does not teach** in a touch-screen display system for generating pixel coordinate estimates responsive to a user touching a display screen, an apparatus for enabling detection of a “no touch” state of said touch-screen display system comprising: at least one dive electrically connected to said at least one bus bar to selectively switch said at least one bus bar between at least two of a plurality of electrical potentials; and at least one shunt eclectically connected across said at least one driver.

Relative to claim 91, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** in a touch-screen display system for generating pixel coordinate estimates responsive to a user touching a display screen, an apparatus for enabling detection of a “no touch” state of said touch-screen display system comprising: selectively switching at least one reference point of at least one axis of said touch-screen display system between at least two of a plurality of electrical potentials by employing electrical driving techniques and electrical shunting techniques.

Relative to claims 132 and 133, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** in a touch-screen display system for generating pixel coordinate estimates responsive to a user touching a display screen, an apparatus for enabling detection of a “no touch” state of said touch-

screen display system comprising: at least one bus bar; at least one driver electrically connected to said at least one bus bar to selectively switch said at least one bus bar between at least two of a plurality of electrical potentials wherein the at least one driver is either selected to have an off state impedance establishing a pre-determined discharge rate or is controlled to establish pre-determined discharge rates.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 5,940,065 Babb et al.

U. S. Patent No. 4,914,624 Dunthorn

U. S. Patent No. 4,853,498 Meadows et al.

Responses

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E Kovalick whose telephone number is 703 306-3020. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent E. Kovalick
March 25, 2005


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